Amendments to the claims

1. (currently amended) An electrode suitable for use in a fuel cell bearing a coating of at least one transport polymer which permits higher oxygen or hydrogen transport than water.

2. (original) An electrode of Claim 1 wherein the transport polymer comprises at least one perfluoroether.

3. (original) An electrode of Claim 2 wherein the perfluoroether is characterized by the general formula:

$$F\text{-}(CF\text{-}CF_2\text{-}O)_n\text{-}CF_2CF_3 \qquad \text{wherein } n=10 \text{ to } 60,$$
$$\quad\;\; |$$
$$\quad CF_3$$

and the carbon chain is saturated and contains only carbon, oxygen and fluorine.

4. (original) An electrode of Claim 1 wherein the transport polymer comprises perfluoropentane.

5. (currently amended) An electrode of Claim 1 wherein the transport polymer comprises substantially amorphous polytetrafluoroethylene.

6. (cancelled) An electrode of Claim 5 wherein the polytetrafluoroethylene is substantially amorphous.

7. (original) An electrode of Claim 1 wherein the transport polymer comprises at least one silicone oil.

8. (original) An electrode of Claim 7 wherein the silicone oil comprises polydimethylsiloxane

9. (original) An electrode of Claim 1 wherein the transport polymer is on one surface of the electrode.

10. (currently amended) In a fuel cell comprising at least one cathode and at least one anode and an ion exchange membrane separating the cathode and the anode, the improvement wherein at least one electrode bears a coating of at least one transport polymer which permits higher oxygen or hydrogen transport than water.

11. (original) A fuel cell of Claim 10 wherein the transport polymer is an oxygen transport polymer on the cathode.

None of the cited references discloses or suggests coating an electrode with at least one transport polymer which permits higher oxygen or hydrogen transport than water. As confirmed by the accompanying Declaration Under 37 CFR 1.132 by the inventor, the teachings of specific compositions used for coating in the cited references lead away from the concept critical to the present invention of a transport polymer which permits higher oxygen or hydrogen transport than water. Water itself has a permeability of 79 Barrers, or units of permeability. The basic NAFION® ionomer has a permeability of 18 Barrers. Accordingly, the ionomer is about 4 times slower in oxygen transport than even water. The crystalline PTFE used as an additive in both Uchida et al. and Kato has a permeability of 4.2 Barrers, also lower than water. Accordingly, not only are the cited references devoid of any suggestion of the present requirement of a transport polymer which permits a higher oxygen or hydrogen transport than water, but the additives used in these references would lead the reader in the opposite direction.

The secondary reference, Okada et al., U.S. Patent 4,943,496, fails to cure the basic deficiencies of Kato and Uchida et al., in that there is no disclosure or suggestion of the presence of a transport polymer which permits higher oxygen or hydrogen transport than water. As with the other references, the most closely related water-repellant material used by Okada et al. is PTFE noted in Tables 1 and 2. As noted above, this exhibits lower transport than water, contrary to the requirements of the present claims.

Claim 6 has been cancelled, and the limitations of that claim inserted in Claim 5.

In view of the above considerations, the cited references, rather than anticipating the invention as presently claimed, lead away from it. Accordingly, Claims 1-5 and 7-12, as amended, define a novel and unobvious advance, and the prompt issuance of a Notice of Allowance is in order. Such action is earnestly solicited. If, for reasons not understood by the

applicant, any issues remain outstanding, the Examiner is urged to contact the undersigned attorney by telephone to expedite their resolution.

Respectfully submitted,

Donald W. Huntley
Attorney for Applicant
Registration No. 24,673
Telephone: 302-426-0610

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Enclosure
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